by email to:
Tom.howard@waterboards.ca.gov

March 2, 2015

Tom Howard, Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

RE: SUPPLEMENTAL COMMENTS REGARDING RESPONSES TO 1/23/15 TUCP AND 3/2/15 EXECUTIVE DIRECTOR'S ORDER

Dear Mr. Howard,

This letter is submitted as supplemental comments of the Bay Institute regarding responses by water contractors to the January 23, 2015, Temporary Urgency Change Petition filed by the California Department of Water Resources and the United States Bureau of Reclamation regarding permits and license of the State Water Project and the Central Valley Project in response to current dry conditions and the February 3, 2015, Order by the Executive Director approving in part and denying in part that Petition.

Based on the most recent data on entrainment of Delta smelt, Chinook salmon and steelhead, given the reality of groundwater overdraft in the San Joaquin River basin, and contrary to the arguments of the CVP and SWP contractors and Friant Water Authority (see discussion below), we urge you to not reconsider your decision to deny the request in the TUCP to authorize an "intermediate pumping" level that would allow increased Delta exports while D-1641's Delta outflow requirements are not in effect.

1. The February 20, 2015, letter from San Luis & Delta-Mendota Water Authority and State Water Contractors to Tom Howard is completely mistaken in its assertions regarding the entrainment risk to public trust fish and wildlife resources of the San Francisco Bay-Delta estuary, and recent data shows that Delta smelt, Chinook salmon and steelhead are being taken at the South Delta export facilities – an adverse impact that will increase if "intermediate" pumping levels are authorized.

The CVP and SWP contractors assert that:

"The data relied upon in the 2015 TUCP Order are now outdated. They were from late December and early January. Current data show important changes in species distribution. The data indicate that Delta Smelt, Longfin Smelt, and each of the Chinook salmon runs are predominantly distributed throughout the northern and western Delta, and are therefore not within an area that presents a high risk of entrainment by the SWP and CVP facilities in the south Delta. See attached species distribution maps and figures, updated with the most current data publicly available as of February 19, 2015" (p.2).

This assertion is based on the incorrect assumption that entrainment risk is limited to times when fish are detected near the export facilities. In fact, significant entrainment events have occurred in the past even when sampling did not detect fish in the South Delta. At such low levels of abundance, fish assemblage sampling programs may not detect fish and these programs were not designed to serve as an early warning system for export operations. It is also possible for the distribution of these fish to change rapidly as environmental conditions change (e.g., following a storm event when runoff and turbidity levels rise rapidly). For example, compare the distribution of spawning Delta smelt, as detected by the Kodiak Trawl, in January-March 2013 (Figures 1-3) to the salvage of Delta smelt at the export facilities in those months (Table 1). In no case did the Kodiak Trawl detect adult females (or males, not shown) at the stations closest to the export facilities; yet entrainment occurred throughout this period, even on days when the survey was failing to detect Delta smelt near the export pumps.

Sample Date	Facility	Species	Salvage	Acrefeet
12/12/2012	SWP	26	4.0	13059
12/13/2012	SWP	26	2.0	13059
12/14/2012	CVP	26	4.0	8769
12/15/2012	CVP	26	4.0	8664
12/16/2012	CVP	26	12.0	8650
12/17/2012	CVP	26	4.0	8642
12/17/2012	SWP	26	8.0	13570
12/18/2012	SWP	26	12.0	13832
12/18/2012	CVP	26	4.0	8392
12/19/2012	SWP	26	10.0	4543
12/20/2012	SWP	26	8.0	3144
12/21/2012	SWP	26	2.0	3176
12/29/2012	CVP	26	4.0	3284

12/30/2012	CVP	26	4.0	3243
12/31/2012	CVP	26	4.0	3146
01/02/2013	CVP	26	4.0	4917
01/07/2013	CVP	26	16.0	5578
01/13/2013	CVP	26	6.0	4962
01/15/2013	CVP	26	10.5	5440
01/19/2013	CVP	26	4.0	1949
01/20/2013	SWP	26	6.0	7168
01/21/2013	SWP	26	8.0	7168
01/22/2013	SWP	26	8.0	7168
01/23/2013	SWP	26	14.0	5506
01/25/2013	CVP	26	4.0	3431
01/26/2013	CVP	26	8.0	3906
01/26/2013	SWP	26	4.0	2513
01/28/2013	CVP	26	12.0	3899
01/29/2013	CVP	26	4.0	3880
01/30/2013	SWP	26	2.0	2838
01/31/2013	SWP	26	2.0	2973
02/01/2013	SWP	26	2.0	2983
02/01/2013	CVP	26	4.0	4489
02/02/2013	CVP	26	4.0	4762
02/02/2013	SWP	26	4.0	2992
02/03/2013	SWP	26	4.0	2974
02/04/2013	CVP	26	3.0	4732
02/05/2013	CVP	26	4.0	4752
02/06/2013	CVP	26	4.0	4744
02/21/2013	SWP	26	2.0	5055
02/27/2013	CVP	26	4.0	6871
02/28/2013	CVP	26	4.0	6062
03/04/2013	CVP	26	4.0	5707
03/09/2013	SWP	26	10.0	5489
03/14/2013	CVP	26	4.0	3377

03/25/2013	CVP	26	4.0	5174

Table 1: Delta smelt salvage winter 2012-2013. Rows highlighted in yellow represent days when salvage occurred on the same days that surveys of Delta smelt distribution indicated that there were no smelt near the export facilities. http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportChart.aspx?Species=2&SampleDate=4%2f1%2f2014&Facility=2

Figures 1-3 below, Kodiak Trawl maps: http://www.dfg.ca.gov/delta/data/skt/DisplayMaps.asp

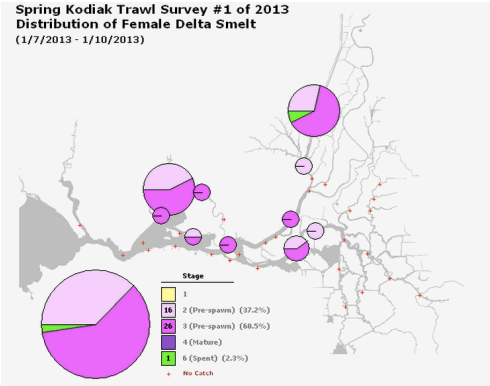

Figure 1: Distribution of Delta smelt (females) in early January 2013. The distribution of males at this time (not shown) was similar. Sampling did not detect smelt near the export facilities, yet, >110 Delta smelt were salvaged at the export facilities across 15 days during that month.

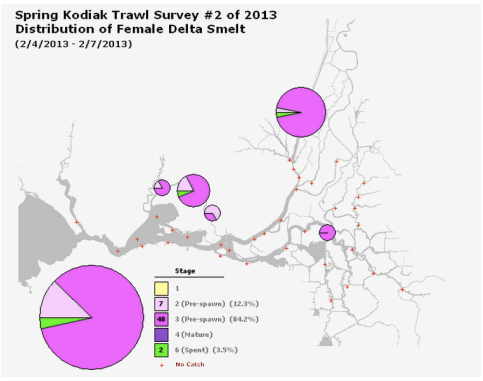

Figure 2: Distribution of Delta smelt (females) in early February 2013. The distribution of males at this time (not shown) was similar. Sampling did not detect smelt near the export facilities, yet, 37 Delta smelt were salvaged at the export facilities on 9 days during that month.

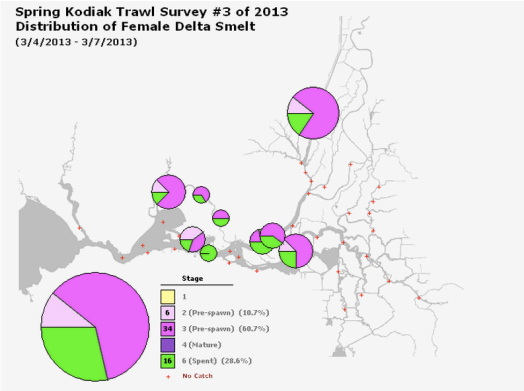

Figure 3: Distribution of Delta smelt (females) in early March 2013. The distribution of males at this time (not shown) was similar. Sampling did not detect smelt near the export facilities, yet, 22 Delta smelt were salvaged at the export facilities on 4 days during that month.

The Department of Fish and Wildlife's information shows that entrainment of Delta smelt has occurred this year, despite the fact that Kodiak trawling has not detected Delta smelt in the region of the export pumps (Table 3, Figures, 4-5). In fact, twelve Delta smelt were salvaged at the CVP facility on February 21, 2015, exactly one day after the CVP and SWP contractors asserted (p. 2) that Delta smelt "are therefore not within an area that presents a high risk of entrainment by the SWP and CVP facilities in the south Delta" and that "there has not been any Delta Smelt salvage since January 7." While sampling may appear to indicate that the Delta smelt are distributed in the northern and western Delta, we note that the Kodiak Trawl may not be good at detecting Delta smelt in those habitat areas closest to the export facilities. Furthermore, given that Delta smelt are at the lowest levels ever recorded in the Fall Midwater Trawl survey, loss of any additional smelt this year, and the continuing impacts to their geographic distribution (relegating them to "safe zones" in the northern Delta only) dramatically increases the risk of extinction for this species and also impairs their ability to recover in the future should any survive this year. It is absolutely essential to remember that only 8 individual Delta smelt were detected in the Fall Midwater Trawl Core index stations in 2014.

Sample Date	Facility	Species	Salvage	Acrefeet
01/02/2015	CVP	26	12.0	5542
01/04/2015	CVP	26	24.0	5539
01/06/2015	CVP	26	4.0	3674
01/07/2015	CVP	26	12.0	3621
01/07/2015	SWP	26	4.0	8011
02/21/2015	CVP	26	12.0	3637

Table 2: Delta smelt salvage through 2/26/2015

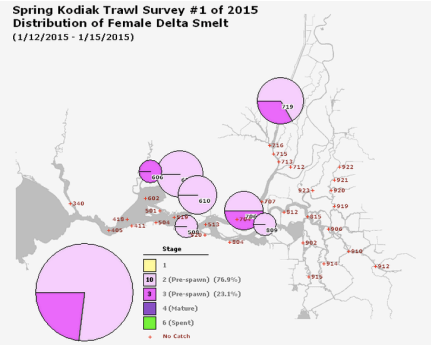

Figure 4: Distribution of Delta smelt (females) in early January 2015. The distribution of males at this time (not shown) was similar. Sampling did not detect smelt near the export facilities, yet, 56 Delta smelt were salvaged at the export facilities on 4 days during that month.

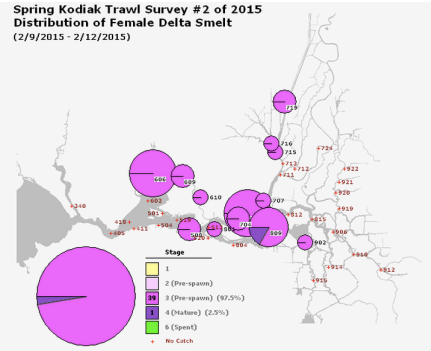

Figure 5: Distribution of Delta smelt (females) in early February 2015. The distribution of males at this time (not shown) was similar. Sampling did not detect smelt near the export facilities, yet, 12 Delta smelt were salvaged at the export facilities on 1 day during that month.

> The CVP and SWP contractors assert (p. 2) that the "attached distribution data indicate Chinook salmon and hatchery steelhead are coming into the Delta, but their current distribution is centered in the north and west. The non-clipped figures show the distribution of natural Chinook salmon, and the clipped figures show the distribution of hatchery Chinook salmon and steelhead. Neither set of distribution figures suggests that there is a salvage/entrainment risk. This is further supported by the fact that the very low levels of Chinook salmon and steelhead salvage seen through January have not increased."

Fall-run, winter-run, and late-fall run Chinook salmon (NMFS uses the latter as surrogates for spring-run Chinook salmon to assess entrainment impacts) have been salvaged at the Delta export facilities throughout January and February 2015, and four times since February 19 (one day prior to the CVP and SWP contractors' letter). Salmon salvaged on February 23, 24, and 25 were winter-run Chinook salmon of hatchery origin, protected using a separate take limit under the NMFS biological opinion. Ironically, these fish were likely among the 600,000 winter-run hatchery fish that were released upstream as part of an emergency action in the first week of February. That release was intended to capitalize on the runoff of prolonged February storms that could carry fish downriver safely; now the winter-run that took advantage of the runoff pulse to assist their migration to the Delta are being negatively impacted by waiving Delta outflow requirements that were designed to capture the benefits of storm runoff, and would be further harmed by increased export pumping during low outflow conditions, if the contractors' request to relax export criteria were granted.

In addition, entrainment of rainbow trout/steelhead has been elevated since export pumping increased in mid-February (Figure 6). Clearly, the contractors' interpretation of the sampling data (and assumption that it represents entrainment risk) was completely mistaken. Many (1,048) of these fish were fin-clipped, indicating their hatchery origins. Hatchery-origin steelhead are not protected under the ESA; however, loss of these fish does represent a significant adverse impact to public trust fish and wildlife resources of the estuary. Approximately 78 of these fish were wild *Oncorhynchus mykiss* (steelhead) and the detection of these fish indicates that many times that number of steelhead were negatively affected by export operations (i.e. were eaten in the canals leading to the salvage facility or became disoriented as they attempted to transit the Delta). In any case, the suggestion that increased exports at this time will not harm native and imperiled fishes is not supported by the facts that salvage of *Oncorhynchus mykiss* began a few days after export rates increased in mid-February 2015.

In summary, the best available information indicates that Delta smelt, winter-run Chinook salmon, and other fish species are currently at risk of entrainment from existing pumping levels in the Delta combined with low outflow conditions. This risk would be unreasonably exacerbated if the TUCP's request for "intermediate" pumping levels were granted, per the contractors' letter. We urge you to reject these requests to relax D-1641 limits on export pumping, and to reconsider your decision to relax the D-1641 Delta outflow requirements for March, given the clear and continuing risk to numerous Bay-Delta species at risk of extinction and of special concern.

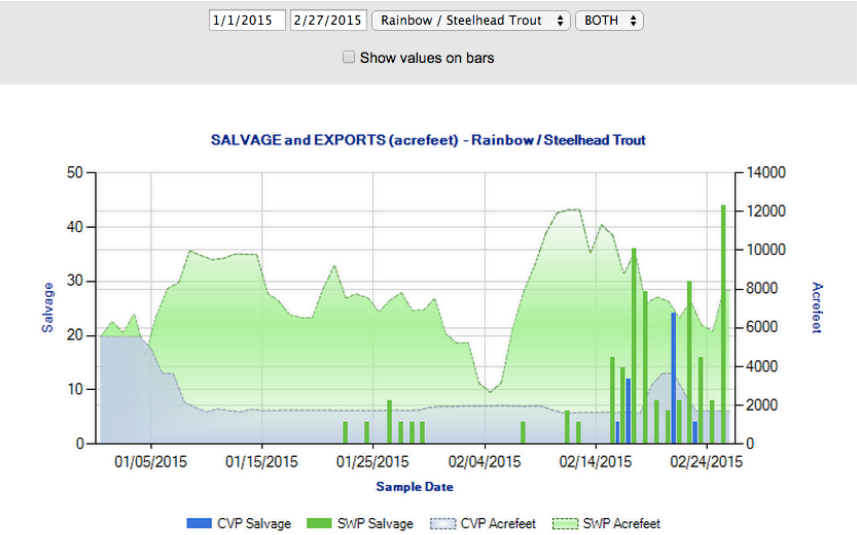

Figure 6: Salvage of *O. mykiss* (steelhead) at the south Delta export pumps in January and February 2015. Note the rapid increase in salvage rates that began a few days after export rates peaked – this pattern is consistent with conceptual models of salmon orientation in an estuarine environment. ftp://ftp.dfg.ca.gov/salvage/DOSS_Salvage_Tables/

2. The February 13 protest and February 18 testimony of Friant Water Authority is unreasonable in requesting the Executive Director to authorize "intermediate" pumping levels to remedy the loss of groundwater drinking water supplies for communities within the Friant service area, given the uncertainty regarding how exported water would actually benefit these communities and given how the amount of exported water would far exceed the critical public health and safety needs of these communities.

In its protest and testimony Friant identified the need to provide critical public health and safety water for communities and individuals in the San Joaquin basin that are completely reliant on groundwater supplies and whose ability to pump from lowering water tables has been reduced significantly (in some cases private wells have run dry). What Friant did not articulate is that these communities are highly vulnerable to drought-related reductions in groundwater levels primarily as a result of long-term overdrafting of the aquifer in the San Joaquin basin, a condition that will persist until sustainable groundwater management practices are implemented in the basin. What Friant also does not clearly disclose is how authorizing "intermediate" pumping levels will actually result in remedying the declining water table problem in these communities. While many private wells went dry last year, particularly in Tulare County, nearly twice as many new wells were drilled, exacerbating the imbalance. Given that these communities are dependent on their wells and given the lack of surface water connections to supply these communities, it is unclearly exactly how these communities will benefit from "intermediate" pumping levels.

The intermediate pumping proposal is a highly inefficient and speculative use of water considering that doing so could result in the extinction or further exacerbate the decline of Delta fish species at record low levels. The US Department of Agriculture has made emergency funds available to small communities to address emergency water needs, and the State of California also has funds that can be used to help provide water from alternative sources (for instance, 2014 assistance in the Tulare Lake Basin is described in: http://www.visaliatimesdelta.com/story/news/local/2014/07/28/tulare-county-gets-million-drought-help/13266557/. These options should be more aggressively pursued where appropriate.

The projected 84 TAF that would become available by authorizing "intermediate" pumping levels is more than 10 times the amount of water needed to provide the 55 gpd for an entire year for the identified water-short communities in the Friant Service Area. The Bureau of Reclamation is working with the Friant contractors to identify means to address the health and safety needs of these communities as they did last year when 6 TAF of water from existing supplies in Millerton Reservoir was provided (including 1700 AF of "unreleased restoration flows" from the San Joaquin River Restoration Program that was made available for that purpose). Friant's argument appears to be less focused on the Petition or the Executive Director's Order and more on disagreements with the US Bureau of Reclamation over how water is allocated between the San Joaquin River Exchange Contractors and Friant in a year when insufficient substitute water is available from the Delta to meet the Exchange Contract supply and San Joaquin River water is used by Reclamation for that purpose, which occurred for the first time in 2014 and will likely occur again this year.

The Bay Institute is willing to offer our expertise and decades of experience in San Joaquin Valley water management to work with the State Board, Friant contractors and Reclamation to develop efficient and feasible solutions to the short term health and safety water needs of the communities. We are not willing to sacrifice the viability of salmon, smelt and other fish populations to allow "intermediate" pumping levels that are neither effective nor efficient solutions to those problems.

Thank you for considering our supplemental comments on this important matter. Please contact me at 415-272-6616 or bobker@bay.org if you have any questions regarding these supplemental comments.

Sincerely,

Gary Bobker
Program Director

Cc: SWRCB members